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Lecture title: **Furunculosis**

{Ulcer Disease, Goldfish Ulcer Disease, Carp Erythrodermatitis}

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Summary:

Definition: is an acute, subacute, chronic or latent disease, primarily among salmonid fishes characterized by focal necrotic swelling in the muscles tissues forming furuncle or boil-like lesions in various tissues of the body.

Causative agent: is caused by motile *Aeromonas salmonicida* which is classified in to

- Typical *A. salmonicida*, isolated from salmonids only (subspecies: salmonicida is usually associated with systemic disease "furunculosis")
- Atypical *A. salmonicida*, isolated from non salmonids species (Goldfish, common carp, koi, Japanese eels)

Incubation period: It is dependent on water temperature. Susceptible fishes at water temperature of 20C will develop furunculosis within 4 to 20 days, the signs of the disease may never develop among susceptible fishes at water temperature below 8 C.

Route of transmission:

1- The pathogen is readily transmitted horizontally (fecal – oral rout from diseased or carrier fish)
2- Direct contact (skin ulcers)
3- Biological vector (sea louse)
4- Vertical transmission via infected ova occurs rarely

Predisposing factors:

1-Physical damage of the skin or gills.
2. Poor water quality
3-Presence of ectoparasites and other diseases.
4. High temperature.

5. High stock density. 6. Rough handling

Clinical signs — GROSS LESIONS

- Per-acute form: This form is restricted in fry fish and leads to rapid death among fish without any clinical signs except fish darkening

- Acute form: This form more common occur in *growing fish(young)* is characterized by
  1- darkening, anorexia, gathering at tank outlets and death
  2- sudden increase in mortality with few or no symptoms within 2-3 days
  3- post - mortem the only findings are hemorrhages which may be seen at bases of fins or in the gills.
  4- *In older fish* acute haemorrhagic septicaemia may occur with or without the characteristic furuncles,
  Raised furuncles, which usually develop in the result localization of bacteria in the dermis or occasionally the epidermis. These fruncules are raised dark, often on the back or sides of the fish which eventually ulcerate to release clear color blood – stained fluid into the water

- Chronic form: This form more common occur in adult fish, is less common than the acute form characterized
  1-bacterial hemorrhagic septicemia
  2-The gastrointestinal tract may have a necrotic enteritis
  3-The mature furuncle bursts leaving deep ulcer or healed furuncle may leave scar tissue
  4-Ventral hemorrhage may be seen near the base of the pectoral, pelvic and anal fins in addition to exophthalmia.

ULCER DISEASE

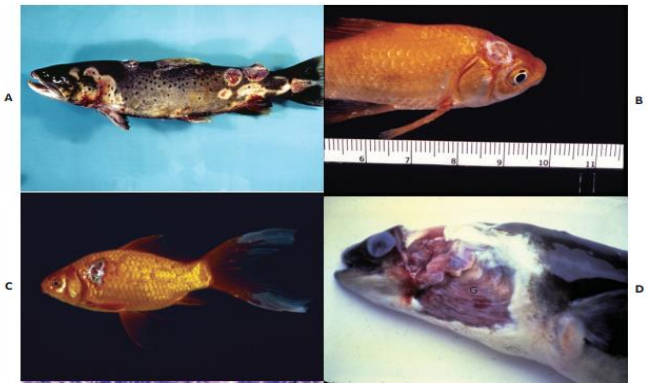
In carp fish

1- Skin lesions range from whitish discolorations to shallow hemorrhagic ulcers to deep lesions that expose underlying muscle or bone
2- Fish may have hemorrhage on the body and the base of the fins

3- Secondarily infected with water molds, protozoa, and other bacteria may be occur

In eels

1- Infections begin as depigmented foci that spread to form large patches of necrotic skin up to 16 cm ^{2} in area. The depigmented patches detach at the dermo epidermal junction, forming large ulcers that expose underlying muscle. The infection commonly affects the head, producing cranial swelling and corneal edema



Diagnosis:-

1- Signs and lesions
2- Definitive diagnosis requires laboratory examination of infected fish; necropsy , culture and bacteria isolation; isolation of bacteria from internal organs (kidney and spleen) in systemic infections is more revealing than sampling superficial ulcers .

Treatment:

1. Sulfamerazine: 150-220 mg/kg fish weight/day for 10-14 days.

Red Spot Disease

Definition:It is bacterial disease affected grass and black fish ,the disease appear as hemorrhagic (hemorrhagic form) occur as Hemorrhagic Septicemia, or skin ulceration on body(Ulcerative form).

Causative Agent *Pseudomonas fluorescens migola* which is Gram negative, motile rods, rounded ends

Clinical signs:-

1-The hemorrhagic form characterized by erosion and sloughing of the scales

specially on the belly region

2- Hemorrhagic spots on the fins and around the mouth.

3-The ulcerative form characterized by skin inflammation and muscular tissue (necrosis) and. 4-The fish loss its appetite and their weight.

Treatment

1- Chlorid powder 5 – 10 mg / liter for 30 minute

2- Broad spectrum A.B.(Oxy tetracycline at 10 gm / 100kg ration)for 10 days